

## CLAIMS

Claim 1. A position encoded sensing device comprising:  
a display panel;  
a light guiding layer disposed on the display panel, the light guiding layer configured to have encoded information therein; and  
a transceiver for detecting light and the encoded information that are outputted from the light guiding layer.

Claim 2. The device of claim 1, wherein the light guiding layer comprises:

a light guiding plate;  
at least one light source disposed at one end of the light guiding plate; and  
a light guiding face disposed within the light guiding plate, wherein the light guiding face is configured to optimally guide the encoded information and light from the at least one light source out of the light guiding plate.

Claim 3. The device of claim 2, wherein the light guiding face is configured to include the encoded information.

Claim 4. The device of claim 2, wherein the light guiding face includes at least one light guiding surface configured to optimally guide the encoded information and light from the at least one light source out of the light guiding plate.

Claim 5. The device of claim 2, wherein the light guiding face includes at least one light guiding serrated surface configured to optimally guide the encoded information and light from the at least one light source out of the light guiding plate.

Claim 6. The device of claim 2, wherein the light guiding face includes at least one light guiding inverse-V surface configured to optimally guide the encoded information and light from the at least one light source out of the light guiding plate.

Claim 7. The device of claim 1, wherein the encoded information comprises at least one display position code information.

Claim 8. The device of claim 1, wherein the transceiver comprises a detector for detecting the light and the encoded information that are outputted from the light guiding layer, and a filter for filtering the light.

Claim 9. A method of sensing a position on a display, said method comprising the steps of:

- displaying information on a display panel;
- positioning a transceiver proximately to the display panel;
- emitting light from at least one light source of a light guiding layer;
- guiding the light with encoded information out of light guiding layer;
- detecting the light and the encoded information outputted from the light guiding layer at the transceiver; and
- processing the encoded information detected by the transceiver.

Claim 10. The method of claim 9, wherein the step of guiding the light comprises the step of:

guiding the light with encoded information formed on a light guiding face of the light guiding layer.

Claim 11. The method of claim 9, wherein the step of guiding the light comprises the step of:

guiding the light with display position code information formed on a light guiding face of the light guiding layer.

Claim 12. The method of claim 9, wherein the step of processing comprises the step of:

determining a position of the transceiver with respect to the display panel based on the detected encoded information.

Claim 13. A system for sensing a position on a display comprising:

a display means for displaying information on a display panel;

a positioning means for positioning a transceiver proximately to the display panel;

an emitting means for emitting light from at least one light source of a light guiding layer;

a light guiding means for guiding the light with encoded information out of light guiding layer;

a detecting means for detecting the light and the encoded information guided out of the light guiding layer at the transceiver; and

a processing means for processing the encoded information detected by the transceiver.

Claim 14. The system of claim 13, wherein the light guiding means guides the light with encoded information that are formed on a light guiding face of the light guiding layer.

Claim 15. The system of claim 13, wherein the light guiding means guides the light with display position code information formed on a light guiding face of the light guiding layer.

Claim 16. The system of claim 13, wherein the processing means comprises:

a determining means for determining a position of the transceiver with respect to the display panel based on the detected encoded information.